JANUARY 2, 1930

The 288th meeting of the Hawaiian Entomological Society was held at 2:30 p.m., at the Experiment Station, H. S. P. A. In the absence of the president and the vice-president, Otto H. Swezey was selected to act as president pro tem. Other members present were: Messrs. Ehrhorn, Hadden, Hagan, Illingworth, Rosa, Van Zwaluwenburg, Weinrich, Willard and Williams.

The minutes of the 287th meeting were read and approved.

Upon motion by Mr. Ehrhorn, a unanimous vote of thanks was extended to Mr. Swezey, the editor of the Proceedings, for his painstaking and efficient work during the past year.

The secretary read a communication from the Zoological Society of London, requesting financial assistance in the publication of the "Zoological Record." Upon motion by Mr. Hadden, it was voted to authorize the secretary to receive contributions for this purpose and forward them to the Zoological Society of London.

PAPERS

"Two New Species of *Anchastus* (Elateridae) from Fiji and Hawaii."

BY R. H. VAN ZWALUWENBURG.

"Notes on Some Bugs Associated with Pineapples in Hawaii."

BY J. F. ILLINGWORTH.

NOTES AND EXHIBITIONS

Deinocossonus sp.—Mr. Swezey exhibited specimens of what appears to be a new cossonid beetle of the genus Deinocossonus. A series of 63 beetles were collected by him and Dr. Williams, December 1, in Haleauau Valley, Oahu, from dead twigs of Pteralyxia. A single example of the tree was found, it being a new locality for the tree, which might be a new species. No fruits were obtainable by which to distinguish the species. Larvae of the beetle were also found numerous in the inner bark of dead or dying twigs. The beetles collected are larger than *D. nesiotes* described from the Waianae Mts., Kauai and Kilauea by Dr. Perkins. They

are uniformly black, too, whereas *nesiotes* has only black head and rostrum, the thorax and elytra being brownish.

Mysticomenus tibialis Sharp.—A specimen of this carabid beetle was exhibited by Mr. Swezey. It was captured by him in dead frond of tree fern (*Cibotium chamissoi*) at the top of Puu Kalena, Waianae Mts., December 29, 1929. The species was first collected by Dr. Perkins in February, 1896, at 2000 ft., lee side, Waianae Mts. Apparently it has not been collected since. There are ten specimens at the Bishop Museum. The species is readily distinguished by the pale elytra with irregular black markings.

Plagithmysus giffardi Perkins.—Two specimens of this longicorn beetle were exhibited by Mr. Swezey. They were reared by him from larvae in Smilax stems, collected at Kilauea, Hawaii, October 14, 1929. This species was collected in numbers by Mr. Giffard on Suttonia trees at Kilauea, which he took to be the host tree. None was reared, however, at that time. Apparently this is the first record of actually rearing this beetle.

Plagithmysus vitticollis Sharp.—A specimen of this longicorn beetle was exhibited by Mr. Swezey, having been reared by him from the stem of *Rubus hawaiiensis* collected on the Upper Hamakua Ditch trail, Kohala Mts., Hawaii, October 6, 1929. This also is apparently the first record of actually rearing the beetle, but specimens were collected on Rubus by Dr. Perkins, and on Perrottetia by Mr. Giffard.

FEBRUARY 6, 1930

The 289th regular monthly meeting of the Hawaiian Entomological Society was called to order at 2:30 p.m., at the Experiment Station, H. S. P. A., by the president, L. A. Whitney. Other members attending were: Messrs. Ehrhorn, Hadden, Hagan, Illingworth, Riley, Rosa, Swezey, Van Zwaluwenburg, Willard and Williams. Mr. W. W. Yothers was a visitor.

The minutes of the previous meeting were read and approved.

PAPERS

"The Pelagic Halobates."

BY FRED C. HADDEN.

NOTES AND EXHIBITIONS

Coccus longulus (Doug.)—Mr. Hagan exhibited specimens of the lima bean plant that he had collected in Wahiawa and that were infested by this scale insect.

Chloridea obsoleta (Fab.)—Mr. Swezey reported finding larvae of this moth in ears of green corn. Three of four ears had been attacked at tip. This is the first time he had found larvae of this species attacking corn, although it is known as the corn ear-worm.

Diaeretus rapae (Curt.)—Three specimens of this braconid were exhibited by Mr. Swezey, who had reared them from parasitized aphids found on a cauliflower from California. It is a parasite that has been known in Hawaii for a long time, parasitizing aphids on cabbage. This incident illustrates how the parasite could have arrived here originally.

Plagithmysus solitarius Sharp.—Two specimens of this longicorn beetle were exhibited by Mr. Swezey, having been reared by him from larvae collected under bark of a fallen Elaeocarpus tree in Haleauau Valley, Waianae Mts., Oahu, December 1, 1929. The tree contained many of the larvae. Some were collected, and ten were placed in borings in a fresh block of wood. The two specimens exhibited issued on January 25 and February 3, respectively. This is the first record of this tree as a host for this species of beetle. Mr. Swezey had previously reared it from Ohia ha on the Pupukea-Kahuku trail, September 18, 1926.

Litomastix floridana (Ashm.)—Mr. Swezey exhibited a caterpillar of *Plusia chalcites* Esp. that was packed full with the pupae of this parasite. After this parasite was discovered to be prevalent in Honolulu about a year ago, Plusia became scarce, the larvae seldom seen. During October to December of 1929, an occasional Plusia caterpillar was found and reared to ascertain whether parasitized or not. None of them contained the parasite, how-

ever. The first recent recovery was a caterpillar collected January 8, 1930, at the Experiment Station, H. S. P. A., grounds, which died January 18 before becoming full-grown, and was found to contain 16 larvae of the parasite. Similarly, a caterpillar collected in Manoa, January 30, died February 2, when half-grown, and was found to contain 90 parasite larvae. The parasitized caterpillar exhibited was collected on Datura at the Exp. Station, H. S. P. A., January 25, spun up when full-grown, and showed to be parasitized February 1. Adult parasites were observed on the Datura bush at time of collecting the caterpillar; a parasite was also observed on a geranium in Manoa recently; a few adult parasites were also collected in sweeping on alfalfa at the University of Hawaii farm, January 5, 1930. Thus it is seen that the parasite is maintaining itself in Honolulu, and it is to be hoped that it will be found established on the other islands where colonies were sent last year.

Hibiscus bud midge.—Mr. Swezey exhibited fragments of a cecidomyid reared from Hibiscus buds. The buds were from a dark pink variety having dark red center, grown by Mrs. Hansen at Kealia, Kauai. They were brought in by Mr. Barnum on September 25, 1929, having been handed to him by Mr. Duvel while on Kauai. The buds of this particular variety were said to be badly affected, falling off before opening. Full-grown larvae were found in the buds when examined. The adults from these issued and became spoiled before being observed, but enough fragments were obtained to determine it as a cecidomyid which has not previously been observed here. The nearest to it found in literature so far is a species in cotton buds (*Contarinia gossypii* Felt) occurring in Barbados and the Virgin Islands (Ent. News, 19, p. 210, 1908; and Virgin Islands, Bul. 3, pp. 17-18, 1923).

Bruchophagus funebris (Howard).—Mr. Swezey exhibited a specimen of the alfalfa seed-chalcis collected by him at Kaunakakai, Molokai, January 25, 1929. A single specimen was obtained in an alfalfa field. It is the first record of its occurrence in the Hawaiian Islands. Mr. Timberlake had recently verified its identity.

Trichogramma minutum Riley.—Mr. Swezey reported having sent slide mounts of egg-parasites reared from eggs of *Bactra*

truculenta Meyrick, *Spodoptera mauritia* Boisd. and *Lycaena boetica* (L.) to Timberlake for study. In a recent letter Mr. Timberlake expresses his opinion that these are all *Trichogramma minutum*. Specimens of a Trichogramma that was introduced along with *Trichogramma japonicum* Ashm. from Japan in 1928 were also sent, and Mr. Timberlake considered them *minutum* also. This is the species that has been reared from quite a number of species of moth and butterfly eggs in Hawaii. It varies considerably in coloration and size; also in the degree of shading on basal third of front wing, sometimes none of this.

Erebus odora (L.)—An undersized specimen of the "black witch" moth was exhibited by Mr. Swezey which was reared from the egg. A female was captured in the Bishop Musuem, October 31, 1929, and laid a few eggs which hatched November 9. The freshly hatched caterpillars had abdominal prolegs only on abdominal segments 5 and 6. After the first molt on November 14, there were four pairs of abdominal prolegs on segments 3 to 6, the two anterior pairs smaller and not functional. The second molt was November 18, and then all prolegs functional; length now 32-35 mm. The third molt was November 20-21; length 60 mm. On November 25, one caterpillar spun up between leaves; pupated November 28 (length 32 mm.); adult issued December 18. On November 29, two caterpillars spun up; adults issued December 22 and 23. December 6, one spun up; adult December 29. The last larva spun December 20; the pupa died. Other larvae died at different times. The largest larva measured was 70 mm. Only three molts were observed. The caterpillars were fed on tender leaves of monkeypod tree. Life cycle: egg 9 days; larval stage 19-41 days; pupa 20-23 days. Egg to adult 48-59 days.

Hawaiian Psocidae.—Dr. Williams mentioned that of 12 species of Hawaiian Psocidae submitted to Mr. Nathan Banks for identification, six were new, as follows*:

1. *Echmepteryx costalis* Banks.
2. *Cyptophania hirsuta* Banks.
3. *Echmepteryx marmorata* Banks.
4. *Caecilius analis* Banks.
5. *Hageniola solitaria* Banks.
6. *Psylloneura williamsi* Banks.

* Described on pages 437-440 following. [Editor.]

C. hirsuta and *C. analis* are often very common in sugar cane fields and *C. hirsuta* and *P. williamsi* sometimes moderately so.

The widely distributed *Hemipsocus roseus* Hagen, rather large, pale brown and with speckled wings is probably the commonest psocid in Hawaiian cane fields, at least on Oahu.

Phaenobremia meridionalis (Felt).—Dr. Williams reported on the identification of the cecidomyid midge in Hawaii that devours aphis, and was reared from the sugar cane aphis by Mr. H. T. Osborn in 1919. The midge is a predator on many kinds of aphis and is found both in Europe and America. Mr. H. F. Barnes of the Rothamsted Experiment Station, Harpenden, England, who determined this midge, has recently published an annotated list entitled: "Gall Midges (Dipt. Cecidomyidae) as Enemies of Aphids," in Bull. Ent. Res. XX, pp. 433-442, 1929.

Scale Insects Attacked by Fungus.—Mr. Ehrhorn exhibited specimens of plants on which were *Coccus viridis* (Green), *C. longulus* (Doug.) and *Saisettia nigra* (Nietn.) badly attacked by fungus, probably *Entomophthora pseudococci.* He stated that the wet season has been very favorable for the development of this fungus and that the same condition had been noted two years ago owing to favorable moisture conditions. This fungus also attacks *Trionymus sacchari* (Ckll.).

Elateridae from New Guinea.—Mr. Van Zwaluwenburg exhibited a collection of Elateridae from New Guinea, the majority of which had been collected by Mr. Pemberton. Several species had been described by him as new and he stated that this collection was the subject of a paper to be published in the Proceedings for the year 1929.

Chilo simplex (Butl.)—Mr. Whitney reported finding larvae of this rice stem borer in rice straw used as packing material for persimmons coming to Hawaii from Japan by mail.

MARCH 6, 1930

The 290th regular meeting of the Hawaiian Entomological Society was called to order by the Secretary at 2:30 p.m., at the

Experiment Station, H. S. P. A. Members present were: Messrs. Chock, Ehrhorn, Hadden, Illingworth, Riley, Rosa, Swezey, Weinrich, Willard and Williams. Dr. G. Cassidy of the H. S. P. A. staff was a visitor. O. H. Swezey was selected to act as president pro tem.

Minutes of the 289th meeting were read and approved.

The secretary announced that he had forwarded to the Zoological Society of London a post office money order for 4 pounds 14 shillings 6 pence, which represented voluntary contributions by members to assist in paying for the publication of the Zoological Record.

Mr. Swezey, the editor of the Proceedings, announced that the Hawaiian Sugar Planters' Association had paid the bill for printing Volume VII, No. 2, of the Proceedings. Upon motion by Mr. Ehrhorn, it was unanimously voted that the secretary write a note of thanks to the Hawaiian Sugar Planters' Association and express to them appreciation for their continued support.

Dr. Cassidy, who had just returned from a trip around the world, gave a very interesting talk about her experiences en route, particularly in Japan, Java and India. During the whole trip, she spent considerable time and effort collecting nematode material in each country visited. This material has already produced many new species of nematodes.

NOTES AND EXHIBITIONS

Erebus odora (L.)—Mr. Ehrhorn exhibited two half-grown caterpillars of this moth which he had found on the trunk of a monkey-pod tree on Alewa Heights, February 25. They were in the cracks of the rough bark and hard to detect because the color was somewhat like the bark. These are the first living larvae found out of doors.

Protoparce quinquemaculata blackburni (Butl.)—Dr. Williams exhibited a female specimen of this moth that was secured as a larva by Mr. Swezey, on Molokai in February, 1929, that had remained in the pupal stage for about a year, issuing in February, 1930.

Pittosporum moth.—Mr. Swezey exhibited a series of a new species of moth reared from leaves of Pittosporum collected on Puu Kalena, Waianae Mts., Oahu, December 29, 1929.

Agromyza virens Loew.—A specimen of this fly was exhibited by Mr. Swezey, which he had reared from stems of Gnaphalium collected at the corner of Wilder Avenue and Keeaumoku Street, Honolulu, March 1, 1930. This is a host plant for this insect, not previously reported in Honolulu.

Phloeophagosoma tenuis (Gemm.)—A series of this beetle was exhibited by Mr. Swezey, having been collected by him in a rotten log of monkey-pod at the Waipio H. S. P. A. substation, February 28, 1930. It is a native beetle that has not been much collected of recent years. At the Bishop Museum is a single specimen collected by Mr. G. P. Wilder at Ulupalakua, Maui. Mr. Swezey had collected one specimen in rotten kukui wood in Ukumehame Valley, Maui, August 29, 1929.

Callithmysus microgaster (Shp.)—Mr. Swezey exhibited two fine specimens of this native beetle that issued from a block of wood of Bobea tree brought in from Waikane, Oahu, January 19, 1930. The beetles issued March 4. The tree from which the wood was taken was one that had recently died and was in just the right condition so that larvae of this beetle were numerous under the bark, many of them nearly full-grown.

APRIL 3, 1930

The 291st Regular Meeting of the Hawaiian Entomological Society was called to order at 2:30 p.m. by the President, L. A. Whitney, at the Experiment Station, H. S. P. A. Other members present were: Messrs. Bryan, Chock, Ehrhorn, Fullaway, Hadden, Hagan, Illingworth, Mason, Pemberton, Riley, Rosa, Swezey, Van Zwaluwenburg, Wilder, Willard and Williams.

The following visitors were present: Dr. W. Dwight Pierce, Dr. Walter Carter, Dr. G. Cassidy and W. W. Yothers.

The minutes of the 290th meeting were read and approved.

The list of common names of insects sent by the American Association of Economic Entomologists to its members for ap-

proval was brought to the attention of those present. After considerable discussion, the secretary was asked to write to the above-mentioned association and express the disapproval of the Hawaiian Entomological Society to the following three proposed common names: Hawaiian Melon Fly, Japanese Rose-Beetle, Sugar-cane Weevil.

Dr. W. Dwight Pierce, who had just completed a three-year stay in the Philippine Islands, where he had been studying insects affecting sugar-cane, was called upon for a few remarks. Dr. Pierce gave a very interesting address on his observations of sugar-cane insects in the Philippines and described methods of dealing with these insects.

MAY 1, 1930

The 292nd regular meeting of the Hawaiian Entomological Society was held at the usual place at 2:30 p.m. with President Whitney in the chair. Other members present were: Messrs. Bryan, Carter, Ehrhorn, Hadden, Hagan, Illingworth, Pemberton, Rosa, Swezey, Van Zwaluwenburg and Weinrich. The following visitors were present: Dr. W. M. Wheeler, Dr. G. H. Godfrey, J. L. Collins, J. R. Cox and Dr. J. W. Chapman.

In the absence of the secretary, Mr. Swezey was called on to serve.

The minutes of the previous meeting were read and approved.

Dr. Walter Carter was elected to active membership.

NOTES AND EXHIBITIONS

Athesapeuta cyperi Marshall.—Mr. Van Zwaluwenburg reported having found this introduced weevil in a nutgrass patch at Puuloa, near the railroad station, April 7, 1930. It is the farthest from the Exp. Station that it is known to have spread on Oahu.

Unidentified longicorn beetle.—Mr. Rosa exhibited a specimen of beetle collected by him at light in Nuuanu Valley, March 18, 1930, it being the second specimen of this immigrant longicorn collected in Honolulu, the first one having been collected by J. A. Kusche May 7, 1919. Its habits are not known.

Chaetodacus cucurbitae (Coq.)—Mr. Whitney reported that males of the melon fly were attracted in numbers to the orchid *Dendrobium superbum.*

Fiorinia fiorinae (Targ.)—Mr. Ehrhorn exhibited a Macadamia leaf infested with this scale.

Acythopeus aterrimus (Waterh.)—Mr. Swezey reported that a specimen of this beetle had been sent in from Hilo, Hawaii, by Mr. L. W. Bryan, April 19, 1930, where it was collected in an orchid house. It is the first record of its occurrence on the island of Hawaii.

Mr. E. H. Bryan, Jr., who had recently returned from several months study at Stanford University, brought greetings from the entomologists of that University, University of California, and the California Academy of Sciences.

Dr. W. M. Wheeler was called on by the chairman, presented greetings from the Harvard University entomologists. He mentioned the change by which the Entomology Dept. of Bussey Institute has been transferred to the Museum of Comparative Zoology at Harvard. He spoke of the length of time that he had been connected with Bussey Institute and mentioned that 45 entomologists had taken their Ph.D. there during that time. At the present time, they have twelve promising Ph.D. students. Dr. Wheeler spoke of the interest there in establishing several tropical stations in South America. Probably one will be established on the Amazon. Already there are stations at Barro Colorado Island, Canal Zone and at Soledad, Cuba. The advantages were portrayed of students attending these stations as part of their work, for which they obtained due credit. In general discussion on ants, Dr. Wheeler mentioned that he contemplated a revision of the ant fauna in Hawaii. He described how the Argentine ant had replaced *Pheidole megacephala* in the Madeira Islands.

Dr. J. W. Chapman, responding to invitation of the chairman, explained that he was just passing through by steamer from the States where he had been on year's leave, and was now returning to the Philippines. He has been in school work on Negros for fourteen years. He mentioned that entomological problems were very numerous in the Philippines, too many to be solved very soon.

Dr. Walter Carter, who had recently joined the staff of the Pineapple Experiment Station, gave some comparisons with conditions where he had previously worked in the Western States with what he finds since his arrival in Hawaii. He recounted some phases of his previous work with the sugar beet leafhopper in relation to transmission of virus from many different plants in the Western States. Many garden crops are now known to be affected by the same kind of virus. He considered that insect transmission involved the main, or soon to be, the most important problems of the entomologists. Resistant varieties is an important solution of the curlyleaf problem with sugar beets. Another solution is to be prepared with a repellant at the time of arrival of a migration of the leafhoppers. The use of soil surface temperature instruments is of importance in determining the critical time.

JUNE 5, 1930

The 293rd meeting of the Hawaiian Entomological Society was called to order at 2:30 p.m., at the Experiment Station, H. S. P. A., by the President, L. A. Whitney. Other members attending were: Messrs. Bryan, Ehrhorn, Hagan, Illingworth, Pemberton, Rosa, Swezey, Van Zwaluwenburg, Weinrich, and Willard.

The minutes of the 292nd meeting were read and approved after minor corrections.

Mr. Bryan read a communication from C. F. Sanborn, entomologist at the Oklahoma Agricultural College, inquiring about collections of ticks in Hawaii. Discussions brought out the fact that there were very few specimens of ticks in insect collections in the islands.

PAPERS

"Miscellaneous Notes."

BY O. H. SWEZEY.

"An Egg-parasite of Thrips in Hawaii."

BY C. E. PEMBERTON.

Paratenodera sinensis (Sauss.)—Mr. Bryan reported that he had been informed by Mr. Will Cooper, of Cooper's Ranch Inn, Hauula, Oahu, that on May 13, 1930, a number of specimens of praying mantis had been taken from Honolulu to the ranch to prey on grasshoppers which were damaging the flowers of Hibiscus and other ornamental plants.

Psychoda sp.—Dr. Illingworth exhibited several specimens of a large moth-like fly captured at Makiki, by Mr. Gerrit P. Wilder. This is apparently a new immigrant to the islands. Specimens collected on Tantalus, May, 1929, are in the collection of the H. S. P. A.

Geotomus pygmaeus Dallas.—Dr. Illingworth reported this small, black bug flying to light at Kaimuki in considerable numbers. They became a nuisance in the house during May by crawling into clothing, and in several instances piercing the skin with the proboscis; their odor, too, is vile. Dr. Perkins first collected this species on Molokai in 1893. Dr. Illingworth again collected it on that island in 1926, where he found it in soil about pineapple roots. See Proc. Haw. Ent. Soc. VI, 392. It is supposed to suck the sap from roots of grasses and other plants.

Coluocera maderae Wollaston.—Dr. Illingworth reported that this tiny beetle, belonging to the family Lathridiidae, was found in considerable numbers in nests of the crazy ant, *Prenolepis longicornis* Latr., at Koko Head, Oahu, Dec. 10, 1922. Specimens were submitted several times to specialists for determination without result. Dr. Wheeler again examined the original specimens, during his visit to Honolulu, May 12, 1930, and was able to place it as above. It is listed in Kritisches Verzeichniss der Myrmekophilen und Termitophilen Arthropoden, E. Wasmann, p. 133, Berlin, 1894. Mr. Illingworth took Dr. Wheeler to the original locality back of Koko Head, May 14, 1930, where these beetles were again found. They apparently only occur in the nests of this species of ant. It would be interesting to know how such an insect gained entrance into the Island. Evidently it must have arrived with a colony of its host.

Xylocopa varipuncta Patton.—Mr. Ehrhorn exhibited photos of *Xylocopa varipuncta,* showing all stages of development, which he found in a dead Hibiscus trunk. The ball of pollen, young larva and full-grown larva, pupae and adult were photographed by R. J. Baker of Honolulu.

Ptinid in cardboard.—Mr. Swezey exhibited a large piece of cardboard which had been received in registered mail from Pusa, India, it being used as a stiffener in mailing a photograph. This cardboard was found badly infested with a small ptinid beetle different from any known in Hawaii. It was fumigated and specimens preserved.

Coptotermes formosanus Shiraki.—Mr. Van Zwaluwenburg reported that many persons believed that termites did not feed on the wallboard called "Celotex." He stated that "Celotex" placed in a cage with a colony of *Coptotermes formosanus* was readily eaten by these insects.

Porthetria dispar (L.).—Mr. Whitney exhibited preserved specimens of two half-grown gipsy moth larvae which had been taken at Honolulu recently from plants of the ornamental Maple growing aboard the steamer *Taiyo Maru* en route from Japan. These specimens were living when taken and their capture illustrates the ease with which destructive insect pests may be transported from one part of the world to another.

Electrical Device for Killing Insects.—Mr. Whitney exhibited a device for killing insects through electrocution. The theory of the device was to attract insects to a light that was surrounded by electrically charged wires. When the insects came in contact with the wires, they were supposed to be killed by the electric current. A test of the device, by placing roaches and flies on the wires, showed that the voltage was not high enough and the insects were stunned, but not killed.

JULY 3, 1930

The 294th regular meeting of the Hawaiian Entomological Society was held at 2:30 p.m. in the entomological laboratory of the Experiment Station, H. S. P. A., President Whitney presiding.

Other members present: Messers. Bryan, Ehrhorn, Illingworth, Mason, Rosa, Swezey, Wilder and Van Zwaluwenburg. Mr. F. A. Bianchi was a visitor.

In the absence of Secretary Willard, Mr. Swezey was appointed Secy. pro tem.

PAPERS

"Manson's Eye-worm Distributed by English Sparrows."

BY J. F. ILLINGWORTH

In discussion, Mr. Ehrhorn related several instances of dwellings being infested by chicken mites on account of nests of the mynah bird. Other members gave similar instances.

NOTES AND EXHIBITIONS

Scymnus ocellatus Sharp.—Dr. Illingworth reported this lady-beetle as a valuable enemy of mealybugs on pineapples, having destroyed many of them in his cages.

Carpophilus maculatus Murray.—Mr. Bryan exhibited a series of these nitidulid beetles and their larvae which had been found infesting walnuts at Schofield Barracks, Oahu. The beetles had riddled the walnuts, which had been kept in a box, but had not attacked almonds in the same box.

Bruchus limbatus Horn.—Mr. Bryan exhibited a series of these bruchid beetles which had been infesting the seeds of *Acacia confusa* on the Honolulu Plantation, Oahu. The specimens had been brought to Bishop Museum by Gerrit P. Wilder, June 30, 1930.

Amorbia emigratella Busck.—Mr. Bryan reported this tortricid moth having been bred from a caterpillar which was found boring into the seed capsule of an orchid (Phais) belonging to Gerrit P. Wilder.

Diocalandra taitensis (Guer.).—Adults, grubs and examples of the borings of the Tahiti coconut weevil were exhibited by Mr. Bryan. They had been obtained from the husk of a dry coconut from Judd St., Honolulu, brought to the Bishop Museum by Gerrit P. Wilder. This weevil, when found in Hawaii, usually

bores into the spathe of coconut inflorescence and in the bases of petioles rather than the nuts.

Prognathogryllus alatus Brunner or new species.—Mr. Bryan exhibited a male specimen of this native tube-inhabiting cricket, collected April 18, 1930, by Wm. H. Meinecke on the ridge between north and south Halawa valleys, Oahu, where the ridge begins to narrow and drop to form a saddle (elevation about 1700 feet), on the leaves of "mokihana" (*Pelea* sp.).

Coleoptera from Tahiti.—Mr. Wilder exhibited some large beetles which he had collected in Tahiti: *Xystrocera globosa* (Oliv.), a brenthid, a large cerambycid; also a large green bug.

Porthetria dispar (L.).—Mr. Whitney exhibited a male gipsy moth bred from a pupa found on juniper on a steamer June 6th, the moth having issued June 22nd. He also exhibited a tortricid moth bred from a pupa on boxwood on the *Shinyo Maru,* June 28, 1930. Considerable discussion was had on the difficulties arising on account of plants used as ornamentals on steamers.

Tetramorium simillimum (Smith).—Mr. Swezey exhibited specimens of an ant from a nest in the ground in a cane field at Waianae Plantation, Oahu, June 18, 1930, which are apparently this species, of which the only specimens in the collections here are three at the Bishop Museum in the Fauna Hawaiiensis collection, recently separated by Dr. Wheeler from a series of *Tetramorium guineense* (Fab.). It had not been recorded here previously.

Bruchus limbatus Horn.—Specimens of this bruchid were exhibited by Mr. Swezey, having been reared by him from seeds of the monkeypod tree collected at Paia, Maui, May 27, 1930. It appears to be the first record of this beetle on Maui.

Agromyza virens Loew.—Mr. Swezey exhibited specimens of this little agromyzid, reared from stems of *Bidens pilosa* and *Ageratum conyzoides* at Waianae Plantation, June 24, 1930. These are new hosts for it here, and the first time it has been found so far away from Honolulu, where it has been known for about two years.

Anagrus sp.—Mr. Swezey exhibited specimens of an unknown mymarid, recently reared from the eggs of the amaranth jassid in Honolulu. The first specimens reared were by Mr. Pemberton on June 20, 1930. They issue quite abundantly from the jassid eggs in leaf petioles of spiny amaranth. It is different from any species previously recorded here.

AUGUST 7, 1930

The 295th regular meeting of the Society was held in the usual place. Those present were: Messrs. Bianchi, Bryan, Carter, Ehrhorn, Fullaway, Illingworth, Mason, Rosa, Swezey, Weinrich, Williams and Van Zwaluwenburg. In the absence of the president and vice-president, Mr. Van Zwaluwenburg was called on to preside, and filled the chair until Vice-President Fullaway arrived later. In the absence of the secretary, Mr. Swezey was appointed secretary pro tem.

Minutes of previous meeting were read and approved.

Messrs. F. A. Bianchi and Sung Hin Au were elected to active membership.

NOTES AND EXHIBITIONS

Oriental cricket.—Mr. Ehrhorn related the recent taking in quarantine inspection by Mr. Whitney of a large singing cricket in small cage, from a passenger on a steamer from the Orient.

Neoclytarlus filipes (Sharp)—Mr. Swezey reported that Dr. Perkins had identified as this species a series of cerambycid beetles that Dr. Williams had reared from dead *Maba sandwicensis* collected along the road through Puuwaawaa Ranch, Hawaii, at about 2000 ft. elevation, August, 1929. It is a species that both Blackburn and Perkins collected on *Sophora chrysophylla,* a tree that occurs in the same region.

Rhyncogonus simplex Perkins.—Mr. Swezey reported on the identification by Dr. Perkins of three specimens of this curculionid beetle, collected at Koko Head, Oahu, January 11, 1928, by F. C. Hadden. In a recent letter Dr. Perkins says, "I have examined these specimens very carefully and at present am unable to separate them from the variable *R. simplex,* found on the lower

slopes of the Molokai Mts. I had many *simplex* and there was a curious sort of dimorphism in the species. . . . In some the hairs were more scale-like than in others, and this applied to both sexes, but as I obtained many specimens *in cop.*, I was able to prove that the pairs often consisted of male of one form and female of the other." There are no specimens of *Rhyncogonus simplex* at the Bishop Museum.

Ceratitis capitata Wied.—Mr. Swezey reported having reared the Mediterranean fruitfly from an infested fruit of *Scaevola gaudichaudiana,* brought in from the Manoa Arboretum, July 10, 1930, by E. L. Caum. This is a native tree and a new host record for the Mediterranean fruitfly in Hawaii.

Systole geniculata Förster.—Specimens of this eurytomid were exhibited by Mr. Swezey, who had reared them from seeds of fennel collected at a labor camp at Ewa Plantation, July 16, 1930. From a small handful of the seed clusters brought in, 12 of this seed-chalcid issued between July 18 and 22. There also issued 56 *Tetrastichus* sp. between July 18 to 30. The latter is no doubt a parasite of the former, for a very closely related species (*Tetrastichus bruchophagi*) is known to be parasitic on *Bruchophagus funebris* (How.) in California and elsewhere. This is the first record of both these species in the Hawaiian Islands. Last January Mr. Timberlake wrote of having received a *Bruchophagus* sp. bred from fennel seeds in New Zealand, and suggested that it be looked for here. As here shown, it was found at the first opportunity. The material was sent to Mr. Timberlake for determination, and he finds that Tetrastichus and Systole are the same that he had from New Zealand, and that our Tetrastichus is but slightly different from *T. bruchophagi* Gahan. His material had been referred to Mr. Gahan at the U. S. National Museum and the determinations are on his authority. Bruchophagus has been found to be a synonym of Systole.

Prolonged hibernation.—A small moth (whose identity is yet unknown) was exhibited by Mr. Swezey which had matured July 24, 1930, from a larva collected July 21, 1929, in stem of Eragrostis grass on the trail leading up to Mt. Kaala, Waianae Mts., Oahu. He and Mr. Fullaway had collected at that time a score or more of the larvae in their cocoons spun up in the grass stems

where they had fed. It is just over a year before the first moth matured, and examination shows that the others are still in larval stage in the pieces of grass stem. This is a remarkably long period for a prepupal stage of a moth in the Islands, where usually there are successive broods throughout the year.

Argyroploce illepida (Butler).—Mr. Fullaway gave an account of his recent trip to the Orient in quest of parasites for the litchi borer (*Argyroploce illepida*). He had worked in the vicinity of Canton, China, where many litchi fruits were found infested. No parasites were found here, though the borer seemed to be kept in check. Some other insects were more injurious. A leafhopper was the most prominent. Finding that search for these parasites was futile in Canton, he went to Japan to work on Adoretus parasites. The parasitism of the beetles of *Popillia japonica* by the tachinid *Ochromeigenia ormioides* was found to be very low—only about 1 to 2%. However, a large quantity of beetles was obtained from which, en route, 120 of the tachinids issued and were brought alive to Honolulu for liberation. These flies carried well in clean empty cage with no plants or other objects inside, and fed regularly.

SEPTEMBER 4, 1930

In the absence of the president and vice-president, the 295th meeting of the Hawaiian Entomological Society was called to order by the secretary at 2:30 p.m., at the Experiment Station, H. S. P. A. Mr. Ehrhorn was selected to act as chairman for the meeting. Other members present were: Messrs. Bianchi, Bryan, Carter, Chock, Ehrhorn, Hagan, Illingworth, Mason, Riley, Rosa, Swezey, Van Zwaluwenburg, Weinrich, Willard and Williams. Dr. A. C. Baker, in charge of Tropical and Subtropical Plant Insect Investigations, Bureau of Entomology, Washington, D. C., and Mrs. A. C. Baker were visitors.

Minutes of the 294th meeting were read and approved as corrected.

Dr. R. N. Chapman was elected to active membership in the Society.

Dr. Carter asked for information regarding the different classes of membership in the Society and suggested it might be advisable to have an associate membership to take care of graduate students and others who might not be able to meet the expense of active membership. Upon motion by Dr. Carter, it was voted to refer this matter to the Executive Committee.

Upon motion by Mr. Swezey, it was voted that the annual outing of the Society be held September 14th, the members assembling at the H. S. P. A. Experiment Station at 8:00 a.m., and that the outing consist of a trip to Haleauau Valley and Mount Kaala.

NOTES AND EXHIBITIONS

Cryptorhynchus mangiferae (Fab.).—Mr. Swezey reported that he had examined the seeds of mangoes eaten in June of this summer to determine whether infested by the mango weevil. Of 50 seeds examined, 40, or 80% of the seeds contained either a larva, pupa, or adult of the weevil. In one instance there were three in one seed. Apparently the eating qualities of the fruits were not impaired by the weevils in the seeds.

Dr. Williams exhibited and called to attention a book entitled "The Witchery of Wasps," by Edward G. Rinehard. Dr. Williams read from the book the foreword by Dr. L. O. Howard.

Dr. A. C. Baker gave a very interesting talk on the campaign against the Mediterranean fruitfly in Florida. His talk was of special interest to those present and gave information on many phases of the work about which little was known heretofore in Hawaii.

OCTOBER 2, 1930

The 297th meeting of the Hawaiian Entomological Society was called to order at 2:30 p.m. by the President, L. A. Whitney, at the Experiment Station, H. S. P. A. Other members present were: Messrs. Bryan, Carter, Ehrhorn, Rosa, Swezey, Weinrich, Wilder, Willard, Williams. The following visitors were present: A. C. Baker, Mrs. A. C. Baker, O. C. McBride, C. B. Keck and T. R. Gardner.

Minutes of the 296th meeting were read and approved.

The Executive Committee reported holding a meeting on October 2nd. At this meeting it was voted to recommend a change in the by-laws that would make available to students of high schools and universities a junior membership, carrying annual dues in the amount of $2.50. It was understood that this class of membership would not have the right to vote. Upon motion by Mr. Ehrhorn, it was voted that the secretary draft a proper amendment and present it at the November meeting.

Mr. Swezey gave an interesting report on the annual outing of the Society, which consisted of a trip to Haleauau Valley and up Mount Kaala, Sept. 14. He stated that 13 participated in the outing and all were enthusiastic about the trip. Messrs. Bryan, Carter and Williams also gave reports of their experiences during the outing.

The following men employed by the U. S. Bureau of Entomology in Honolulu were nominated by the secretary for active membership: O. C. McBryde, C. B. Keck, M. MacPhail, W. H. Mitchell, and R. H. Marlowe. K. Ito, K. Sakimura and John Stanley, employes of the Pineapple Planters' Experiment Station, were nominated for active membership by Dr. Carter.

PAPERS

"Insects of Samoa, a Review."

BY E. H. BRYAN, JR.

NOTES AND EXHIBITIONS

Mealybug enemies from the Philippines.—Mr. Swezey mentioned that a consignment had been received at the Experiment Station, H. S. P. A., from F. C. Hadden, Los Banos, P. I., in which parasitized pink sugar-cane mealybugs had been sent. No parasites had issued since arrival, but from alcoholic material sent, the parasite is an *Anagyrus* species very closely similar to *Anagyrus dactylopii* (How.), introduced a few years ago from Hongkong by Mr. Fullaway, and which has proved so effective as a parasite on *Pseudococcus filamentosus* (Ckll.). In the same consignment were sent various stages of a tiny yellow ladybeetle which feeds on the young mealybugs. There were 40 adults and 118 larvae alive. They readily took to feeding on mealybugs sup-

plied to them, and there are good prospects of this ladybeetle being multiplied for distribution.

Ootetrastichus formosanus Timb.—Mr. Swezey reported having collected this leafhopper egg-parasite from cane at Kawela, Molokai, March 19, 1930. It was not previously recorded from Molokai. It never was colonized on Molokai at the time of its introduction, and has reached that island without special assistance, the same as did *Cyrtorhinus mundulus* (Bredd.), the bug which sucks the eggs of the cane leafhopper.

Anagyrus swezeyi Timb.—Mr. Swezey reported having reared this parasite from *Trionymus insularis* Ehr. on grass at Kanoa, Molokai, September 24, 1930. Not hitherto recorded from that island.

Erebus odora (L.).—Mr. Ehrhorn reported finding one full-grown caterpillar of the "black witch" moth *Erebus odora* on a monkeypod tree, Makiki; also two 1/3-grown caterpillars, all on September 10th. The full-grown one pupated on September 12th and adult moth issued on September 30th. He thought that there is a continuous brood, as he found the same conditions on Alewa Heights. Caterpillars are not abundant, and usually are on the bark of the tree during the day. The color of the bark makes it hard to detect them. Mr. Au exhibited a pupa of this insect which had been found between two grain sacks on Alewa Heights. Discussion indicated that this insect is now on all islands of the group.

Anagrus sp.—Mr. Swezey exhibited a slide mount of specimens of an unknown species of Anagrus, bred from eggs of some unknown insect in leaves of *Ipomoea bona-nox,* collected at the stream from Haleauau Valley, Waianae Mts., Oahu, where the firebreak trail crosses the stream, September 14, 1930. A large number of the parasites had issued from the eggs, the latter being very abundant in about a dozen leaves collected. None of the host insect hatched from the eggs, hence their identity remains unknown.

Zorotypus swezeyi Caudell.—A specimen of this rare insect was exhibited by Mr. Swezey. It was collected by Mr. Van Zwalu-

wenburg in a rotten log in Haleauau Valley, Sept. 14, 1930. A specimen had been collected on the trail up Mount Kaala a few years ago by Mr. Swezey, not far from the same location.

Mr. T. R. Gardner of the U. S. Bureau of Entomology, who has been stationed in Japan for the past seven years, and who is now on his way to the Japanese Beetle Laboratory in New Jersey, gave a very interesting talk on the Japanese beetle *Popillia japonica* and the methods of collecting, rearing, and shipping parasites of this beetle from the Orient to New Jersey.

NOVEMBER 6, 1930

The 298th regular meeting of the Society was held at the usual place, 2:30 p.m., with President Whitney in the chair. Other members present were: Messrs. Au, Bianchi, Bryan, Chapman, Ehrhorn, Hagan, Illingworth, Ito, Keck, McBride, McPhail, Marlowe, Mitchell, Riley, Rosa, Sakimura, Stanley, Swezey, Van Zwaluwenburg, Weinrich and Williams, and Dr. A. C. Baker, T. M. Blackman, Tai Hee Hong and K. H. Lau as visitors. In the absence of the Secretary, Mr. Swezey was appointed Secretary pro tem.

Minutes of previous meeting were read, corrected and approved.

On motion that the Secretary cast the ballot, the following were duly elected to active membership: O. C. McBride, W. H. Mitchell, C. B. Keck, R. H. Marlowe, M. McPhail, John Stanley, K. Sakimura and K. Ito.

The executive committee reported on an amendment to the by-laws to provide for junior members. It was passed, and "Article 3, Members" will now read:

> The Society shall consist of Active, *Junior,* Corresponding and Honorary members. No Corresponding members shall be elected from residents on the Island of Oahu. *Junior Members shall be students at high schools or colleges.*
>
> Election of members shall be by ballot, nomination having been made by a member of the Society at a previous meeting. A majority vote of active members present shall be necessary for election.
>
> The annual dues for Active Members shall be five dollars, *for Junior Members two dollars and fifty cents,* and for Corresponding Members two dollars; Active Members absent from the Territory for

twelve consecutive months or more to be considered as Corresponding Members. Honorary Members shall be exempt from dues.

Any member in arrears for one year may, after due notification, be dropped from the rolls. No member in arrears shall be entitled to a vote or to the Proceedings of the Society for that year.

(Note: The italicized portions are the additions to the Revised By-laws as adopted April 3, 1919.)

PAPERS

"Melasides Nouveaux provenant des collections de la Experiment Station of the Hawaiian Sugar Planters' Association, Honolulu."

BY E. FLEUTIAUX

(Presented by Mr. Van Zwaluwenburg)

NOTES AND EXHIBITIONS

Chloridea obsoleta (Fab.).—Mr. Ehrhorn mentioned the prevalence of the corn ear-worm in green corn at the present time. Others commented on its habits in Hawaii and that it had hardly been known as a corn pest here heretofore. Its more common food plants have been Hibiscus (flowers and buds), tomato, flower heads of marigold, Siegsbeckia, African daisy, etc.

Derolathrus atomus Sharp.—Two specimens of this minute colydiid beetle were exhibited by Mr. Van Zwaluwenburg. They were taken from beneath the bark of a dead Elaeocarpus tree in Haleauau Valley, at the foot of Mount Kaala, Oahu, at an elevation of about 2500 feet, September 14, 1930. The specimens had been determined by Mr. Swezey. Previously this species has been known only from the Koolau range, its only capture since the collection of the original material by Dr. Perkins on "Oahu" being by Mr. Swezey in 1925 on the Pupukea trail, in dead Xylosma.

Aphodius lividus Oliv.—Mr. Swezey reported the occurrence of this beetle swarming at lights at Kaunakakai, Molokai, October 27, 1930. At one electric light in an ice-cream parlor, a few sweeps of the net secured 340 of the beetles. Along with these were counted: 4 *Pleurophorus parvulus* Chev. (another aphodiid), 1 small staphylinid, 11 *Arctocorixa blackburni* (White), and 1 amaranth jassid.

Lagocheirus obsoletus Thoms.—A specimen of this longicorn beetle was exhibited by Mr. Swezey, who had caught it at light at Mapulehu, Molokai, September 24, 1930. It had apparently not been recorded on that island previously.

Melittobia hawaiiensis Perkins.—Mr. Swezey reported having found this parasite very prevalent in nests of mud-dauber wasps on buildings of the Mapulehu Dairy, Molokai, September 9, 1930. They were breeding on the larvae of the mud-dauber, and also on larvae of *Pachodynerus nasidens* (Latr.) in old mud-dauber cells. From one Pachodynerus larva 335 adults matured.

Cycloptiloides americanus (Sauss.).—A specimen of this small cricket was exhibited by Mr. Swezey, collected under stone at Kanoa, Molokai, October 27, 1930. It had not previously been recorded from that island.

Bruchus amicus Horn.—Mr. Swezey reported the collecting of specimens of this bettle from tufts of Eragrostis grass (where they were hiding) in Iao Valley, Maui, September 11, 1930. Apparently the first record of its occurrence on Maui.

Nesamiptis plagiota Meyrick.—A specimen of this moth was exhibited by Mr. Swezey, who had reared it from a caterpillar collected on Eragrostis grass, Iao Valley, September 11, 1930. It is the first time that the moth has been reared. The caterpillar was similar to that of *Nesamiptis obsoleta* (Butl.), which commonly feeds on grasses in the native forests throughout the islands.

Litomastix floridana (Ashm.)—A dead Plusia caterpillar containing pupae of this parasite was exhibited by Mr. Swezey. The caterpillar was found feeding on *Datura arborea,* October 30, 1930, at the Experiment Station, H. S. P. A. Another Plusia caterpillar had been collected similarly October 20, from which the parasites when matured were counted, there being 901 from the single host caterpillar. This parasite is continuing a quite effective control of Plusia in Honolulu since its discovery here in February, 1929.

Systole geniculata Först.—Mr. Swezey reported rearing four of this seed-chalcid from fennel seeds collected by Mr. Van Zwaluwenburg in Kohala, Hawaii, October 3, 1930. Ten *Tetrastichus*

sp., the parasite of the above, issued from the same batch of seeds. This is the first record of these insects occurring on the Island of Hawaii. They were first discovered at Ewa Plantation in fennel seeds, July 16, 1930.

Rhabdocnemis obscura (Boisd.)—Mr. Swezey reported that in company with Mr. Chock, two Pritchardia palms were examined on Pacific Heights, which were badly infested with the sugar cane borer. The borer grubs were chiefly in the bases of the leaf stalks where they had done so much damage that the stalks were in a very rotten condition, causing the leaves to drop off earlier than normal, according to the householder. About half of the grubs found and examined contained maggots of the tachinid parasite, *Ceromasia sphenophori* Vill. Most of the borer cocoons contained the parasite puparia or else old empty puparia. This was the worst infestation of a palm by this beetle that Mr. Swezey had ever seen. The trees seemed to be thriving, however, the trunks were not much injured, and the most of the leaves were in fine condition. It was a remarkable occurrence of the tachinid parasite working in such unusual circumstances so far from any cane fields, where it normally lives and attacks the borers in cane.

Reticulitermes hesperus Banks.—Mr. Whitney reported the finding of this termite infesting redwood burls imported from California. It was the second time that this termite had been intercepted at the port of Honolulu. He also reported the intercepting of *Kalotermes* sp. from Mexico, in quarantine inspection work.

Mounted butterfly eggs.—Mr. Blackman exhibited mounts of butterfly eggs. The eggs had been blown and permanently mounted on glass microscope slides.

DECEMBER 4, 1930

The 299th regular meeting of the Society was held at the usual place at 2:30 p.m., President Whitney presiding. Other members present were: Messrs. Bianchi, Bryan, Chapman, Carter, Hagan, Au, Illingworth, Ito, Keck, McBride, Mitchell, Stanley, Swezey,

Van Zwaluwenburg, and Wilder; and the following visitors: T. M. Blackman and Amy Suehiro.

In the absence of the secretary, Mr. Ehrhorn was appointed secretary pro tem.

Minutes of the previous meeting were read and approved.

Mr. Joseph T. Watt was elected to active membership.

Officers elected for 1931 were as follows:

President, A. C. Mason.

Vice-President, Dr. R. N. Chapman.

Secretary-Treasurer, Dr. F. X. Williams.

Other members of Executive Committee, D. T. Fullaway, E. M. Ehrhorn.

Mr. Swezey presented the matter of a request from Mr. J. A. Hyslop that the Society furnish a list of common names of the common insects in Hawaii to be incorporated with a list being assembled by the committee on nomenclature of the American Association of Economic Entomologists. On motion, the Chair appointed a committee of Messrs. Swezey, Bryan and Ehrhorn to get up such a list.

PAPERS

"Pineapple Cannery Waste and its Insect Problems."

BY DR. J. F. ILLINGWORTH.

"On some new and little-known Fulgoroidea from South America."

BY F. MUIR.

(Presented by O. H. Swezey)

"Descriptions of New Hawaiian Coleoptera."

BY DR. R. C. L. PERKINS

(Presented by title by O. H. Swezey)

PRESIDENTIAL ADDRESS

"Origin and Development of Plant Quarantine"

BY L. A. WHITNEY.

NOTES AND EXHIBITIONS

Pyroderces rileyi (Walsm.)—Dr. Hagan reported that among pineapple seeds used by the Associated Hawaiian Pineapple Can-

ners' department of genetics, were found a number of lepidopterous larvae which were seriously damaging the seeds. The adults, after being reared, were determined by Mr. Swezey as *Pyroderces rileyi*. As they were destroying seeds stored for breeding purposes, they could be considered of considerable economic importance.

Rhyncogonus simplex Perkins.—Mr. Swezey exhibited a specimen of this native weevil, captured by him on *Malvastrum tricuspidatum* at Koko Head, Oahu, November 27, 1930. Eighteen specimens were captured at that time, in the same spot where Mr. Hadden had collected three specimens in January, 1928. Some of the beetles were kept alive to try breeding them.

Volucella pusilla Macq.—Specimens of this syrphid fly were exhibited by Mr. Swezey. The first specimen was captured by Mr. Rosa in Oahu Sugar Co. Plantation, October 30, 1930. Seven more were captured by Messrs. Swezey and Williams on plants of *Alternanthera versicolor* at Red Hill across the road from the Hawaiian Pineapple Company's fruit stand, November 25, 1930.

Chlorion (*Isodontia*) *harrisi* Fernald.—Mr. Swezey read a note by Dr. Williams reporting on the discovery by Mr. Swezey and himself, on November 25, 1930, alongside field 4B, Waianae Plantation, Waianae, Oahu, of a large sphecoid wasp closely related to *Chlorion* (*Isodontia*) *harrisi* Fernald, if not that species. Altogether two males and one female were taken in this lowland area. Several other specimens were seen at Euphorbia flowers. *Isodontia harrisi* is common in the United States, east of the Rocky Mountains, and has also been reported from Mexico. It preys upon tree crickets (*Oecanthus* sp.), but another species may also capture young grasshoppers. In the tropics less is known of their habits. They are not burrowing wasps, but use some preexisting cavity for a nest, and fashion cells of dried grass or other plant fibre, as the pappus of seeds, tomentum of plants, etc.

Sodium Fluoride as an ant repellant.—Mr. Ehrhorn related his experience with the ants *Pheidole megacephala* and *Plagiolepis mactavishi* swarming into houses and entering electric conduits and destroying the insulation, this especially being true of *P. megacephala*. Sodium fluoride had been used successfully as a

repellant, and carbon bisulphide had been used in killing nests of the latter ant in sandy soil. The swarming mentioned usually occurs when there are abundant rains, which seem to drive the ants into houses.

New Myriapod Records.—Mr. Van Zwaluwenburg reported that among cane soil fauna submitted to Dr. Folsom from the Experiment Station, H. S. P. A., were numerous myriapods which he referred to Prof. Stephen R. Williams of Miami University, Oxford, Ohio. The latter has made the following identifications: *Scolopendrella neotropica; Scolopendrella simplex; Polyxenus* (probably) *fasciculatus* Say (described from southern United States). The pauropod common in cane soils, he writes, "has the size and appearance of *Pauropus huxleyi* Lubbock." This species is recorded from Europe, both seaboards of the United States, and Lower California.

New Collembola Records.—Mr. Van Zwaluwenburg also reported that Dr. Folsom of Tallulah, La., reports upon Hawaiian Collembola submitted to him as follows:

From cane soils:

Isotomodes sp.
Onychiurus fimetarius (L.) Lubb.
Folsomia fimetaria (L.) Lubb.
Isotoma palustris Mull. var. *balteata* Reut.

From pineapple soil:

Lepidocyrtus cyaneus Tull.

Soil Arachnid new to Hawaii.—Mr. Van Zwaluwenburg further reported Dr. C. R. Crosby as writing concerning material collected in cane-field soils: "Among these minute Arachnids I found some very interesting things. One is a blind spider and the other is a specimen of the order Microthelyphonida. There are only a few species of this order in the world, but they are widely distributed."